

Application No. 10/764,203
Amendment Dated June 16, 2005
Reply to Office Action of January 19, 2005

REMARKS

In the Patent Office Action dated July 15, 2005, claims 1-3, 5-14, 16-19 and 21-23 were examined with the result that all claims were rejected. The Examiner made the rejection final. In response, Applicant has filed a Request for Continuing Examination (RCE) and the present Amendment wherein claims 1, 13 and 17 have been rewritten. In view of the above amendments and following remarks, reconsideration of this application is requested.

In the Office Action, claims 1-3, 5-11, 13-14, 16-19 and 21-23 were rejected under 35 USC §103(a) as being unpatentable over Coulter U.S. 4,572,484 in view of Heinemann et al U.S. 5,947,719 and Drago et al U.S. 5,103,523. It is the Examiner's position that Coulter discloses a pallet construction that includes a pallet deck having a series of slots formed therein and a support frame for the pallet deck. Coulter, however, did not disclose staggered slots so the Examiner cited Heinemann et al for its teaching of staggered slots in a grate assembly. Finally, the Examiner cites Drago et al for its teaching of cross bracing in a bridge construction for the purpose of strengthening a truss structure and increasing load bearing capacity. Therefore, the Examiner concluded that it would be obvious to modify the pallet construction of Coulter to add the staggered slots of Heinemann et al and the cross bracing of Drago et al.

Before turning to the rejection of record, Applicant would like to summarize the amendments made to independent claims 1, 13 and 17. These claims have been amended to call for the horizontal brace members and angular cross braces of the support frame to be affixed to and engaging the bottom surface of the pallet deck. Support for this amendment can be found in the specification as filed as for example at page 8, paragraph 0031, last two sentences as well as at page 8, paragraph 0032 in the discussion relating to brace members 60 being "affixed" to the mid-point between the inner and outer corners of frame members 63 and 65. Thus, no new matter has been introduced into the claims.

The present invention relates to maximizing gas flow through the pallet construction by maximizing the open area of the slots in the deck without reducing the structural strength of the pallet. Neither the Coulter nor the Heinemann et al patents discuss ways to increase the open area of the deck without reducing the structural integrity of the pallet. In fact, as described in the application as filed, the use of staggered slots is for structural purposes, not just for even distribution of gas flow, although even distribution of gas flow does, in fact, result from the use of staggered and parallel slots.

The Heinemann et al patent utilizes a honeycomb structure to support its pallet deck. There is clearly no suggestion in Heinemann et al that one could reduce the amount of structural support underneath the top deck, or that angled cross braces could be utilized, without reducing the structural support for the pallet deck. As the present invention utilizes the slotted deck as a structural component, and thus advantageously also utilizes the load distribution pattern produced by staggered slots (see Applicant's Figures 9A and 9B), the need for a honeycomb box-like support underneath the deck, such as that described in Heinemann et al can be eliminated. The support frame underneath the deck can be replaced with cross braces that minimize the amount of deck surface that is blocked and maximizes the amount of deck surface that is available for slots.

The cross bracing used in Drago et al is intended to provide stability of the structure parallel to the plane of the cross bracing utilizing the tension resistance of each rod. Due to the small section modulus of the rods and their tendency to buckle in compression and/or bending, the rods add little or no torsional or bending resistance to the bridge structure in planes perpendicular to the cross bracing.

The cross bracing used on the pallets of the present invention is intended to provide rigidity and stability in all planes both perpendicular and parallel to the cross bracing. In planes perpendicular to the deck, the depth of the cross bracing members provide bending and torsional resistance. By affixing or attaching the cross bracing

members directly to the bottom surface of the deck, the stiffness of the deck is greatly increased by preventing any relative movement between the bottom surface of the deck and the top surface of the cross bracing member. Essentially, this results in a very large section modulus of the total pallet as compared to considering the section modulus of the deck and members separately.

In prior pallets with non-staggered slots such as those illustrated in Coulter, the pallets usually arranged the support members parallel and perpendicular to the slots and no slots passed over the support members per se. Apparently it was realized that long, non-staggered slots running the width of the pallet and passing over the support members would be too weak. Thus, the non-staggered slots were broken up into a symmetrical pattern where the slot length was kept to a reasonable length and no slots passed over the support members. Because of the necessity from a manufacturing standpoint to have a symmetrical slot pattern when burning slots into a plate, a cross braced support pattern was never considered. A cross braced pattern would require slots of varying lengths that would be difficult to burn into a thick plate deck.

By utilizing a staggered slot pattern, however, the strength of the plate deck can be significantly increased. This allows the slot pattern to pass over the support members. Therefore, a symmetrical slot pattern can be used with a cross bracing support pattern resulting in a much greater open area for gas flow.

Accordingly, Applicant requests the Examiner withdraw the §103(a) rejection based upon Coulter, Heinemann et al and Drago et al.

In the Office Action, claim 12 was rejected under 35 USC §103(a) as being unpatentable over Coulter in view of Heinemann et al, Drago et al, and further in view of Allen et al U.S. 6,135,531. The additional citation of Allen et al was merely to disclose that beveled welding is known in the art. However, Allen et al does not teach what is missing from Coulter, Heinemann et al, and/or Drago et al as discussed above.

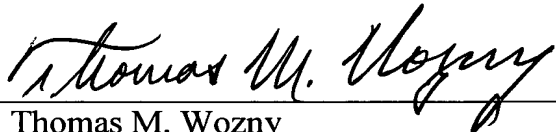
Application No. 10/764,203
Amendment Dated June 16, 2005
Reply to Office Action of January 19, 2005

Accordingly, Applicant believes this rejection should be withdrawn by the Examiner in view of the amendments made herein to the independent claims.

An effort has been made to place this application in condition for allowance and such action is earnestly requested.

Respectfully submitted,

ANDRUS, SCEALES, STARKE & SAWALL, LLP

By 
Thomas M. Wozny
Reg. No. 28,922

Andrus, Sceales, Starke & Sawall, LLP
100 East Wisconsin Avenue, Suite 1100
Milwaukee, Wisconsin 53202
Telephone: (414) 271-7590
Facsimile: (414) 271-5770